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## CARD-4 MOLECULES AND USES THEREOF

tttttatggg aatcgagct tggaagagac agarcaattc cagaawtaaa ttgraattga	60
agatttaacc aatgttggtt taaaatattc taacttcaaa gaatgatgcc agaacttwaa	120
aagggrctgc gcagagtagc agggggccctg gagggcgcgg cctgaatcct gattgccctt	180
ctgctgagag gacacacgca gctgaagatg aatttgggaa aagtagccgc ttgctacttt	240
aact atg gaa gag cag ggc cac agt gag atg gaa ata atc cca tca gag	289
Met Glu Glu Gln Gly His Ser Glu Met Glu Ile Ile Pro Ser Glu	
1 5 10 15	
tct cac ccc cac att caa tta ctg aaa agc aat cgg gaa ctt ctg gtc	337
Ser His Pro His Ile Gln Leu Leu Lys Ser Asn Arg Glu Leu Leu Val	
20 25 30	
act cac atc cgc aat act cag tgt ctg gtg gac aac ttg ctg aag aat	385
Thr His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn	
35 40 45	
gac tac ttc tcg gcc gaa gat gcg gag att gtg tgt gcc tgc ccc acc	433
Asp Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr	
50 55 60	
cag cct gac aag gtc cgc aaa att ctg gac ctg gta cag agc aag ggc	481
Gln Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys Gly	
65 70 75	
gag gag gtg tcc gag ttc ttc ctc tac ttg ctc cag caa ctc gca gat	529
Glu Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp	
80 85 90 95	
gcc tac gtg gac ctc agg cct tgg ctg ctg gag atc ggc ttc tcc cct	577
Ala Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro	
100 105 110	
tcc ctg ctc act cag agc aaa gtc gtg gtc aac act gac cca gtg agc	625
Ser Leu Leu Thr Gln Ser Lys Val Val Val Asn Thr Asp Pro Val Ser	
115 120 125	
agg tat acc cag cag ctg cga cac cat ctg ggc cgt gac tcc aag ttc	673
Arg Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe	
130 135 140	
gtg ctg tgc tat gcc cag aag gag gag ctg ctg ctg gag gag atc tac	721
Val Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Glu Glu Ile Tyr	
145 150 155	
atg gac acc atc atg gag ctg gtt ggc ttc agc aat gag agc ctg ggc	769
Met Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly	
160 165 170 175	

FIG. 1A

agc ctg aac agc ctg gcc tgc ctc ctg gac cac acc acc ggc atc ctc Ser Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu 180 185 190	817
aat gag cag ggt gag acc atc ttc atc ctg ggt gat gct ggg gtg ggc Asn Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly 195 200 205	865
aag tcc atg ctg cta cag cgg ctg cag agc ctc tgg gcc acg ggc cgg Lys Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg 210 215 220	913
cta gac gca ggg gtc aaa ttc ttc ttc cac ttt cgc tgc cgc atg ttc Leu Asp Ala Gly Val Lys Phe Phe Phe His Phe Arg Cys Arg Met Phe 225 230 235	961
agc tgc ttc aag gaa agt gac agg ctg tgt ctg cag gac ctg ctc ttc Ser Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe 240 245 250 255	1009
aag cac tac tgc tac cca gag cgg gac ccc gag gag gtg ttt gcc ttc Lys His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe 260 265 270	1057
ctg ctg cgc ttc ccc cac gtg gcc ctc ttc acc ttc gat ggc ctg gac Leu Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp 275 280 285	1105
gag ctg cac tgc gac ttg gac ctg agc cgc gtg cct gac agc tcc tgc Glu Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys 290 295 300	1153
ccc tgg gag cct gcc cac ccc ctg gtc ttg ctg gcc aac ctg ctc agt Pro Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser 305 310 315	1201
ggg aag ctg ctc aag ggg gct agc aag ctg ctc aca gcc cgc aca ggc Gly Lys Leu Leu Lys Gly Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly 320 325 330 335	1249
atc gag gtc ccg cgc cag ttc ctg cgg aag aag gtg ctt ctc cgg ggc Ile Glu Val Pro Arg Gln Phe Leu Arg Lys Lys Val Leu Leu Arg Gly 340 345 350	1297
ttc tcc ccc agc cac ctg cgc gcc tat gcc agg agg atg ttc ccc gag Phe Ser Pro Ser His Leu Arg Ala Tyr Ala Arg Arg Met Phe Pro Glu 355 360 365	1345

FIG. 1B

cgg gcc ctg cag gac cgc ctg ctg agc cag ctg gag gcc aac ccc aac	1393
Arg Ala Leu Gln Asp Arg Leu Leu Ser Gln Leu Glu Ala Asn Pro Asn	
370 375 380	
ctc tgc agc ctg tgc tct gtg ccc ctc ttc tgc tgg atc atc ttc cgg	1441
Leu Cys Ser Leu Cys Ser Val Pro Leu Phe Cys Trp Ile Ile Phe Arg	
385 390 395	
tgc ttc cag cac ttc cgt gct gcc ttt gaa ggc tca cca cag ctg ccc	1469
Cys Phe Gln His Phe Arg Ala Ala Phe Glu Gly Ser Pro Gln Leu Pro	
400 405 410 415	
gac tgc acg atg acc ctg aca gat gtc ttc ctc ctg gtc act gag gtc	1537
Asp Cys Thr Met Thr Leu Thr Asp Val Phe Leu Leu Val Thr Glu Val	
420 425 430	
cat ctg aac agg atg cag ccc agc agc ctg gtg cag cgg aac aca cgc	1585
His Leu Asn Arg Met Gln Pro Ser Ser Leu Val Gln Arg Asn Thr Arg	
435 440 445	
agc cca gtg gag acc ctc cac gcc ggc cgg gac act ctg tgc tgc ctg	1633
Ser Pro Val Glu Thr Leu His Ala Gly Arg Asp Thr Leu Cys Ser Leu	
450 455 460	
ggg cag gtg gcc cac cgg ggc atg gag aag agc ctc ttt gtc ttc acc	1661
Gly Gln Val Ala His Arg Gly Met Glu Lys Ser Leu Phe Val Phe Thr	
465 470 475	
cag gag gag gtg cag gcc tcc ggg ctg cag gag aga gac atg cag ctg	1729
Gln Glu Glu Val Gln Ala Ser Gly Leu Gln Glu Arg Asp Met Gln Leu	
480 485 490 495	
ggc ttc ctg cgg gct ttg ccg gag ctg ggc ccc ggg ggt gac cag cag	1777
Gly Phe Leu Arg Ala Leu Pro Glu Leu Gly Pro Gly Gly Asp Gln Gln	
500 505 510	
tcc tat gag ttt ttc cac ctc acc ctc cag gcc ttc ttt aca gcc ttc	1825
Ser Tyr Glu Phe Phe His Leu Thr Leu Gln Ala Phe Phe Thr Ala Phe	
515 520 525	
ttc ctc gtg ctg gac gac agg gtg ggc act cag gag ctg ctc agg ttc	1873
Phe Leu Val Leu Asp Asp Arg Val Gly Thr Gln Glu Leu Leu Arg Phe	
530 535 540	
ttc cag gag tgg atg ccc cct gcg ggg gca gcg acc acg tcc tgc tat	1921
Phe Gln Glu Trp Met Pro Pro Ala Gly Ala Ala Thr Thr Ser Cys Tyr	
545 550 555	

FIG. 1C

cct ccc ttc ctc ccg ttc cag tgc ctg cag ggc agt ggt ccg gcg cgg Pro Pro Phe Leu Pro Phe Gln Cys Leu Gln Gly Ser Gly Pro Ala Arg 560 565 570 575	1969
gaa gac ctc ttc aag aac aag gat cac ttc cag ttc acc aac ctc ttc Glu Asp Leu Phe Lys Asn Lys Asp His Phe Gln Phe Thr Asn Leu Phe 580 585 590	2017
ctg tgc ggg ctg ttg tcc aaa gcc aaa cag aaa ctc ctg cgg cat ctg Leu Cys Gly Leu Leu Ser Lys Ala Lys Gln Lys Leu Leu Arg His Leu 595 600 605	2065
gtg ccc gcg gca gcc ctg agg aga aag cgc aag gcc ctg tgg gca cac Val Pro Ala Ala Ala Leu Arg Arg Lys Arg Lys Ala Leu Trp Ala His 610 615 620	2113
ctg ttt tcc agc ctg cgg ggc tac ctg aag agc ctg ccc cgc gtt cag Leu Phe Ser Ser Leu Arg Gly Tyr Leu Lys Ser Leu Pro Arg Val Gln 625 630 635	2161
gtc gaa agc ttc aac cag gtg cag gcc atg ccc acg ttc atc tgg atg Val Glu Ser Phe Asn Gln Val Gln Ala Met Pro Thr Phe Ile Trp Met 640 645 650 655	2209
ctg cgc tgc atc tac gag aca cag agc cag aag gtg ggg cag ctg gcg Leu Arg Cys Ile Tyr Glu Thr Gln Ser Gln Lys Val Gly Gln Leu Ala 660 665 670	2257
gcc agg ggc atc tgc gcc aac tac ctc aag ctg acc tac tgc aac gcc Ala Arg Gly Ile Cys Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala 675 680 685	2305
tgc tcg gcc gac tgc agc gcc ctc tcc ttc gtc ctg cat cac ttc ccc Cys Ser Ala Asp Cys Ser Ala Leu Ser Phe Val Leu His His Phe Pro 690 695 700	2353
aag cgg ctg gcc cta gac cta gac aac aac aat ctc aac gac tac ggc Lys Arg Leu Ala Leu Asp Leu Asp Asn Asn Asn Leu Asn Asp Tyr Gly 705 710 715	2401
gtg cgg gag ctg cag ccc tgc ttc agc cgc ctc act gtt ctc aga ctc Val Arg Glu Leu Gln Pro Cys Phe Ser Arg Leu Thr Val Leu Arg Leu 720 725 730 735	2449
agc gta aac cag atc act gac ggt ggg gta aag gtg cta agc gaa gag Ser Val Asn Gln Ile Thr Asp Gly Gly Val Lys Val Leu Ser Glu Glu 740 745 750	2497

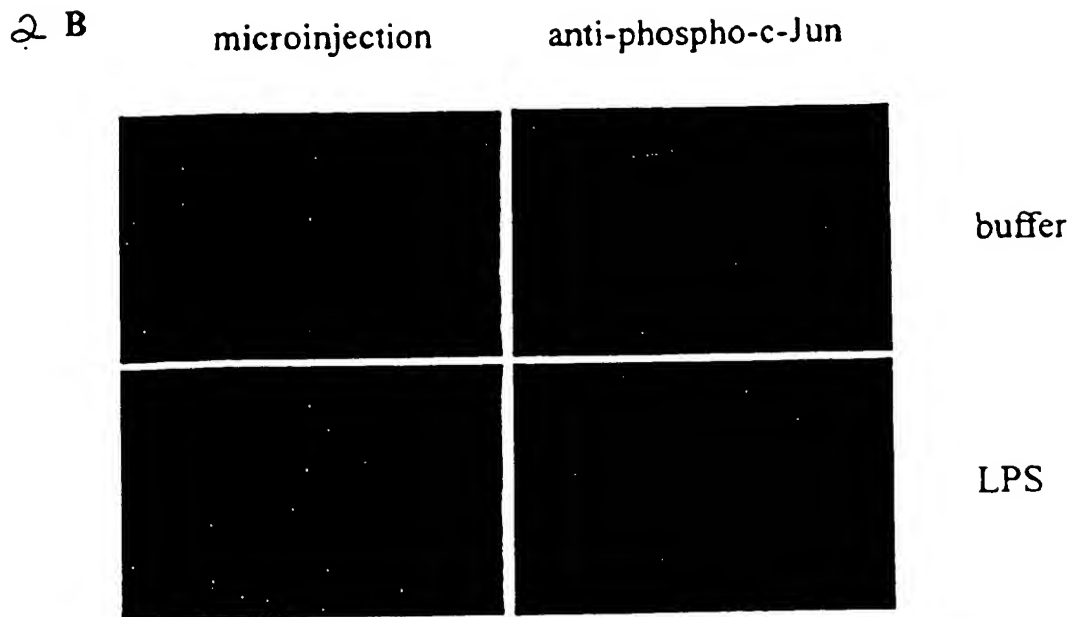
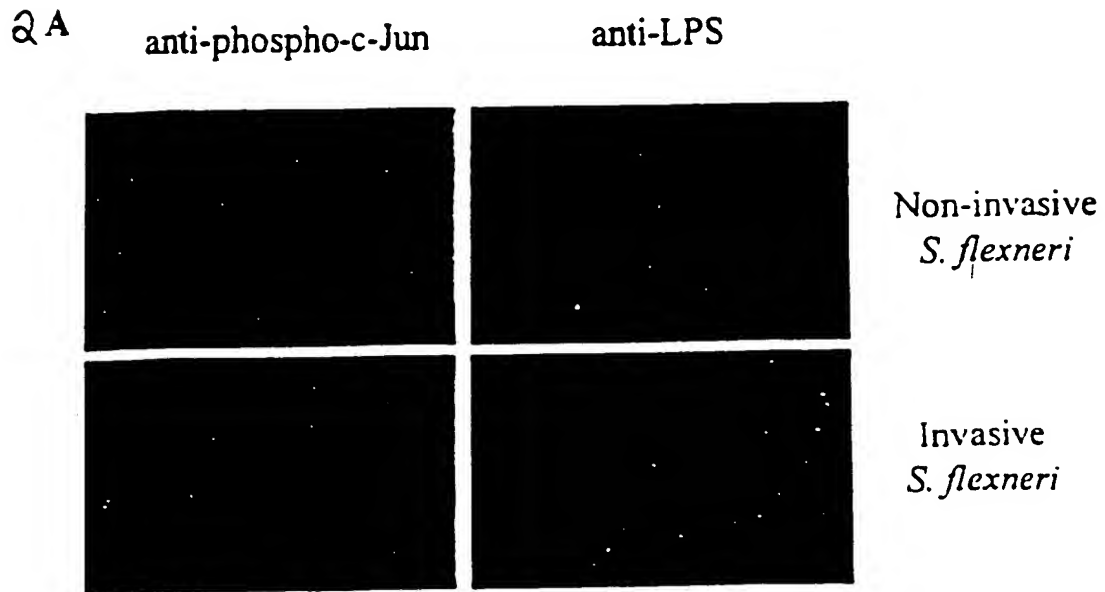
FIG. 1D

ctg acc aaa tac aaa att gtg acc tat ttg ggt tta tac aac aac cag	2545
Leu Thr Lys Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln	
755 760 765	
atc acc gat gtc gga gcc agg tac gtc acc aaa atc ctg gat gaa tgc	2593
Ile Thr Asp Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu Cys	
770 775 780	
aaa ggc ctc acg cat ctt aaa ctg gga aaa aac aaa ata aca agt gaa	2641
Lys Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser Glu	
785 790 795	
gga ggg aag tat ctc gcc ctg gct gtg aag aac agc aaa tca atc tct	2689
Gly Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn Ser Lys Ser Ile Ser	
800 805 810 815	
gag gtt ggg atg tgg ggc aat caa gtt ggg gat gaa gga gca aaa gcc	2737
Glu Val Gly Met Trp Gly Asn Gln Val Gly Asp Glu Gly Ala Lys Ala	
820 825 830	
ttc gca gag gct ctg cgg aac cac ccc agc ttg acc acc ctg agt ctt	2785
Phe Ala Glu Ala Leu Arg Asn His Pro Ser Leu Thr Thr Leu Ser Leu	
835 840 845	
gcg tcc aac ggc atc tcc aca gaa gga gga aag agc ctt gcg agg gcc	2833
Ala Ser Asn Gly Ile Ser Thr Glu Gly Gly Lys Ser Leu Ala Arg Ala	
850 855 860	
ctg cag cag aac acg tct cta gaa ata ctg tgg ctg acc caa aat gaa	2881
Leu Gln Gln Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu	
865 870 875	
ctc aac gat gaa gtg gca gag agt ttg gca gaa atg ttg aaa gtc aac	2929
Leu Asn Asp Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val Asn	
880 885 890 895	
cag acg tta aag cat tta tgg ctt atc cag aat cag atc aca gct aag	2977
Gln Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala Lys	
900 905 910	
ggg act gcc cag ctg gca gat gcg tta cag agc aac act ggc ata aca	3025
Gly Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser Asn Thr Gly Ile Thr	
915 920 925	
gag att tgc cta aat gga aac ctg ata aaa cca gag gag gcc aaa gtc	3073
Glu Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro Glu Glu Ala Lys Val	
930 935 940	

FIG. 1E

tat gaa gat gag aag cgg att atc tgt ttc tgagaggatg ctttcctgtt	3123
Tyr Glu Asp Glu Lys Arg Ile Ile Cys Phe	
945 950	
catgggggttt ttgccctgga gcctcagcag caaatgccac tctgggcagt cttttgtgtc	3183
agtgtcttaa aggggcctgc gcaggcggga ctatcaggag tccactgcct ycatgatgca	3243
agccagcttc ctgtgcagaa ggtctggtcg gcaaactccc taagtaccg ctacaattct	3303
gcagaaaaag aatgtgtctt gcgagctgtt gtagttacag taaatacact gtgaagagaa	3363
aaaaaaaaacg gacgcgtgg	3382

FIG. 1F



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Fig. 2A - 2B



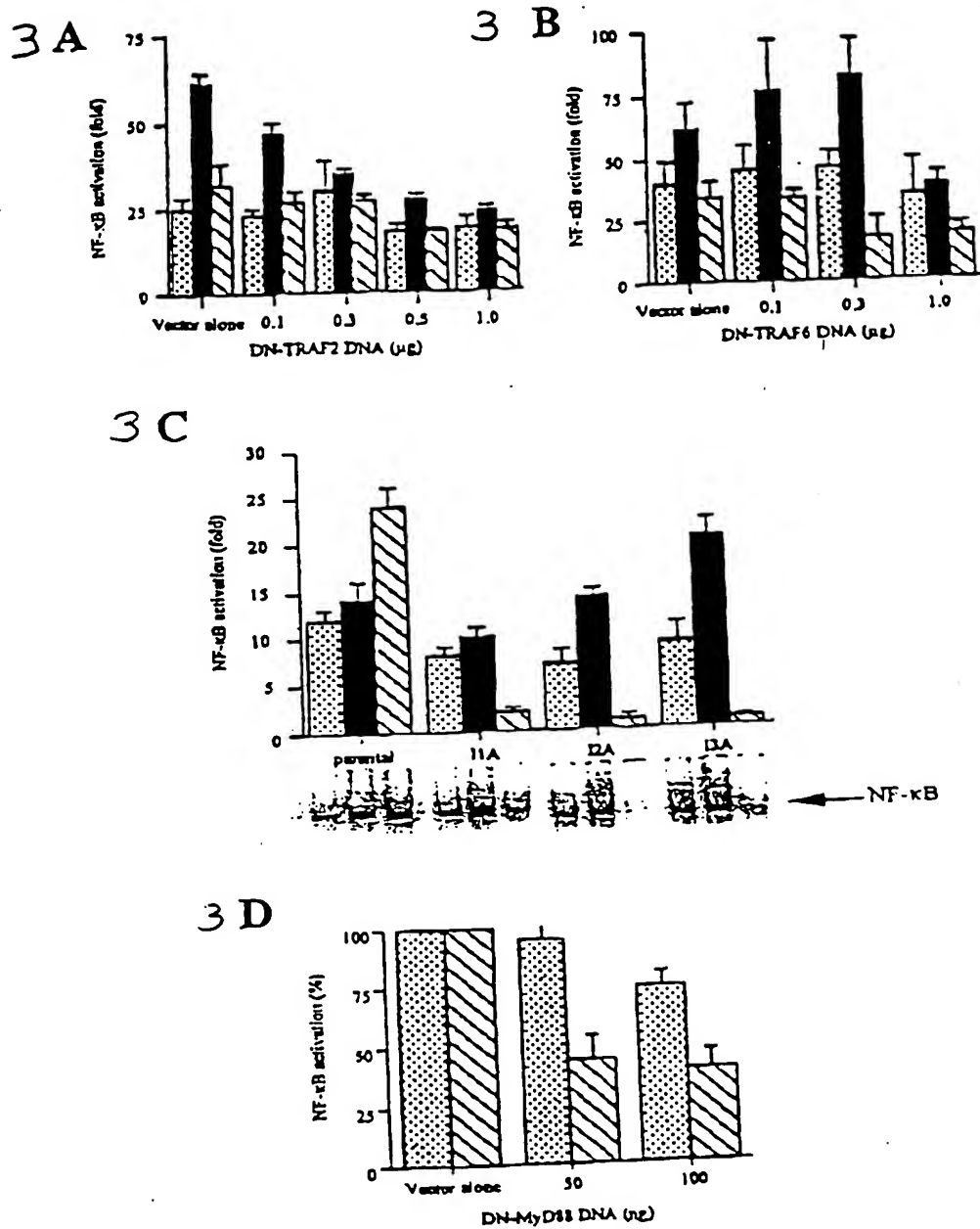
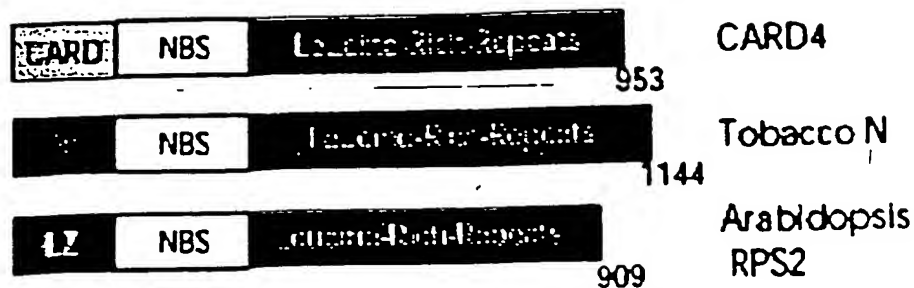


Fig. 3 A - 3 D

4 A



4 B

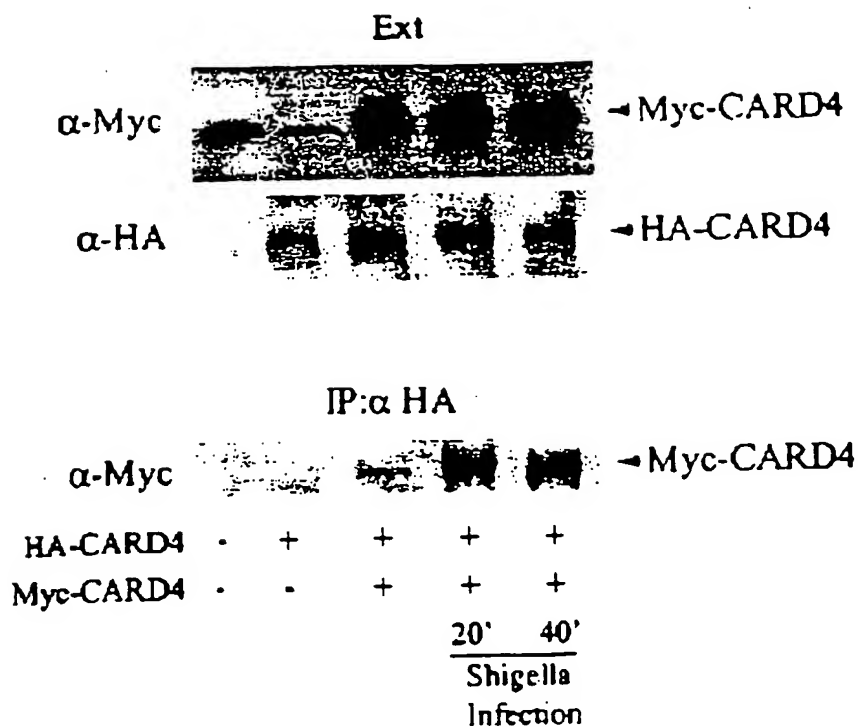


Fig 4A-4B

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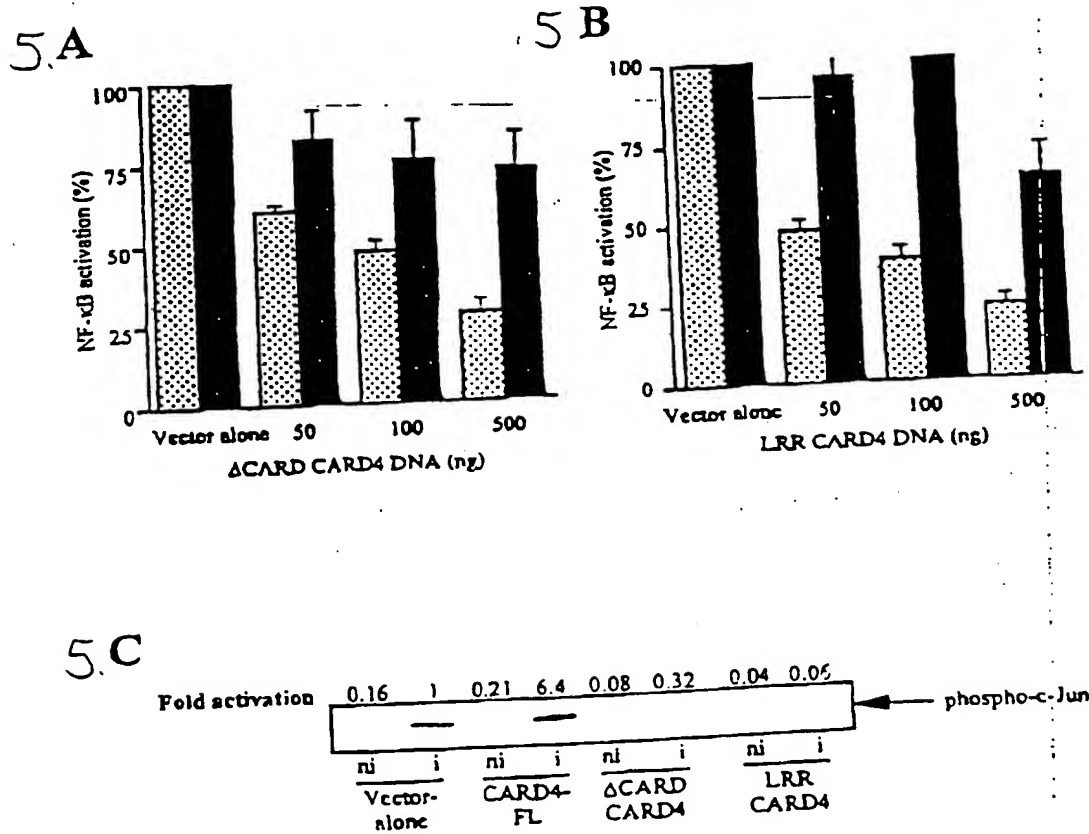


Fig. 5A-5C

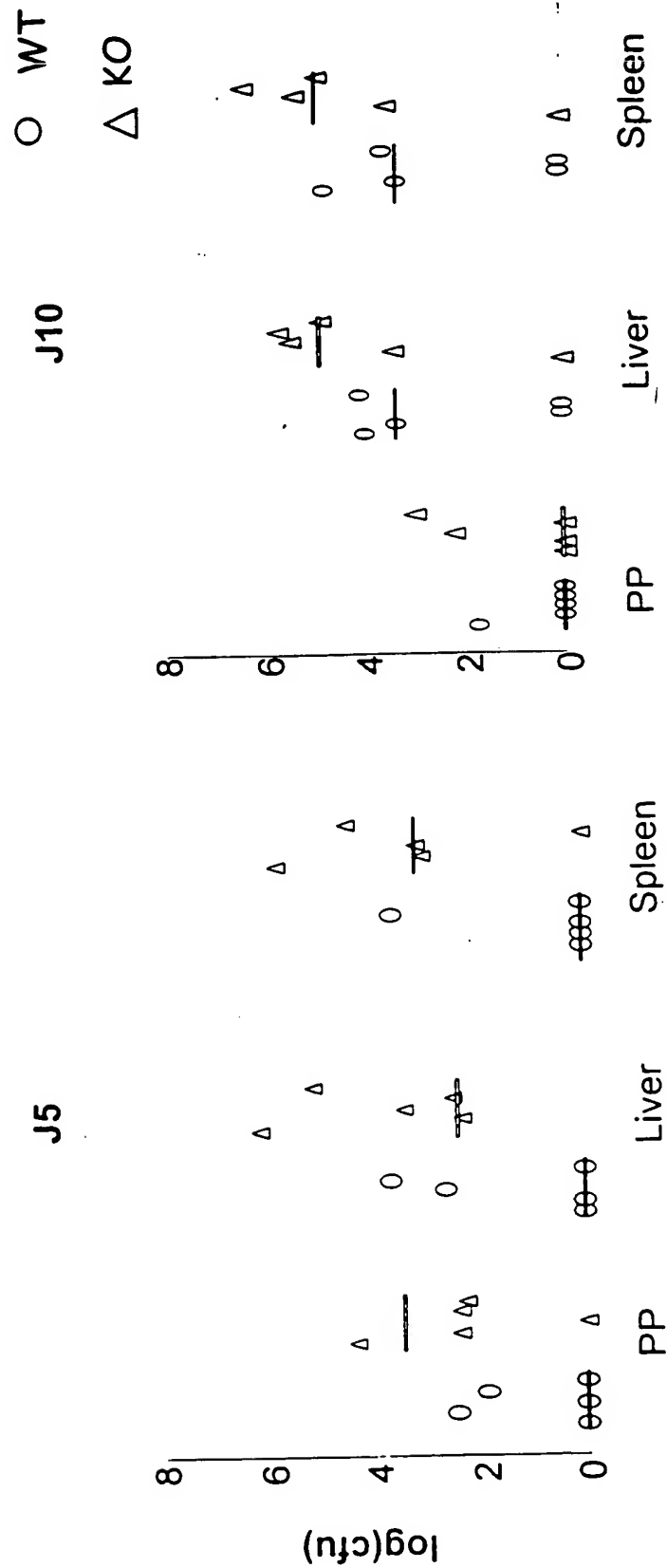
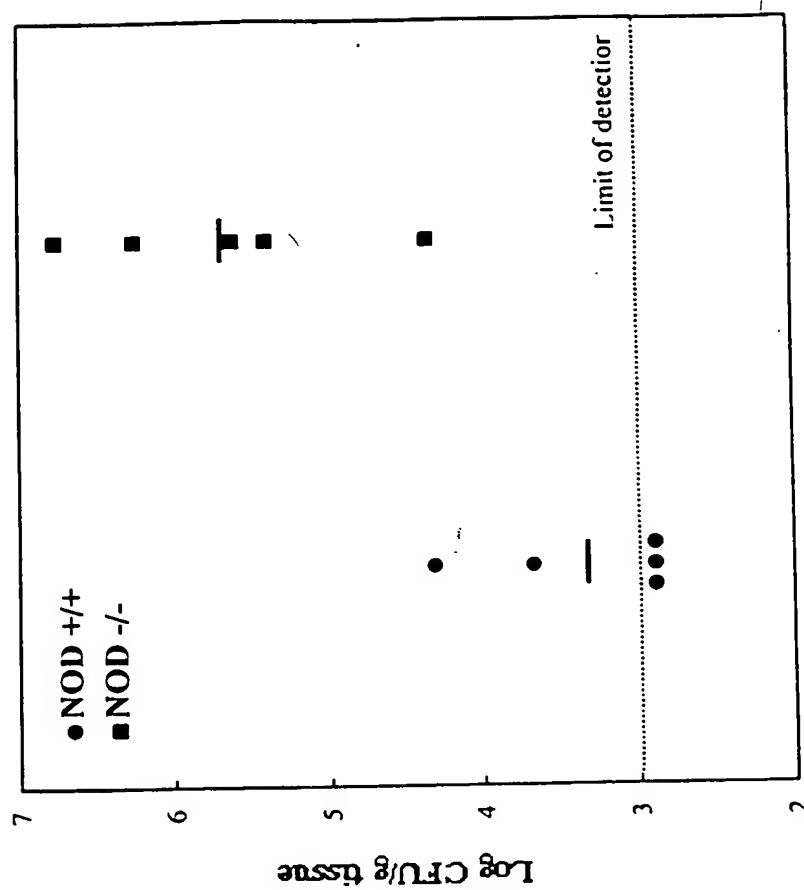


FIG. 6



**FIG. 7**